Background:

Podplanin is a type-1 transmembrane sialomucin-like glycoprotein that is involved in cell migration, tumor cell invasion and metastasis. It is specifically expressed in lymphatic endothelial cells but not in blood vessel endothelial cells. Recent studies have showed the expression of podoplanin in various malignancies, including oral squamous cell carcinoma, and suggested it as a prognostic marker.

Aims and Objectives:

To evaluate and correlate the immunohistochemical expression of podoplanin in oral potentially malignant disorders, oral squamous cell carcinoma and normal oral mucosa.

Materials and methods:

This was a retrospective study including a total of 90 (30 oral potentially malignant disorders, 30 oral squamous cell carcinoma and 30 normal oral mucosa) samples. Immunohistochemical expression of podoplanin was analyzed in formalin fixed paraffin embedded blocks of histopathologically confirmed cases, using monoclonal D2-40 antibody. The expression of podoplanin was graded from grade 0 - 4.

Results:

There was a significant variation in the grades of podoplanin expression between the samples of oral premalignancy, oral squamous cell carcinoma and normal oral mucosa. Podoplanin expression increased with the severity of dysplasia in OPMDs and with the decrease in grades of differentiation in OSCC. The number of

cases showing podoplanin expression was also significantly higher in OSCC (100%) and OPMD (86.7%), compared to that observed in normal oral mucosa (30%).

Conclusion:

The observations from the present study suggest that podoplanin may be considered as a marker in assessing the risk of malignant transformation of oral premalignancies and prognosis of oral squamous cell carcinoma. Further studies with increased sample size and proper follow-up are recommended.

Keywords: Squamous cell carcinoma, oral premalignancy, podoplanin, immunohistochemistry.